

**FIGURE.** Model of diagnosis, examination, and treatment of Achilles pain, stiffness, and muscle power deficits. Superscript letters indicate that the guidelines are based on (A) strong evidence, (B) moderate evidence, (C) weak evidence, (D) conflicting evidence, (E) theoretical/foundational evidence, or (F) expert opinion.

### Decision Tree Model

A pathoanatomical/medical diagnosis of midportion Achilles tendinopathy can provide valuable information in describing tissue pathology and may assist in planning treatment and predicting prognosis. The proposed model for examination, diagnosis, and treatment planning for patients with Achilles pain, stiffness, and muscle power deficits associated with midportion Achilles tendinopathy uses the following components: (1) medical screening, (2) classification of the condition through evaluation of clinical findings suggestive of musculoskeletal impairments of body functioning (ICF) and associated tissue pathology/disease (ICD), (3) determination of irritability stage, (4) determination of evaluative outcome measures, and (5) intervention strategies for patients in acute and nonacute stages. This model is depicted in the **FIGURE**.

#### Component 1

Medical screening incorporates the findings from the history and physical examination to determine whether the patient's symptoms originate from a condition that requires referral to another health care provider. Acute Achilles tendon rupture and systemic inflammatory disease would be examples

of conditions that would require referral to another health care provider.

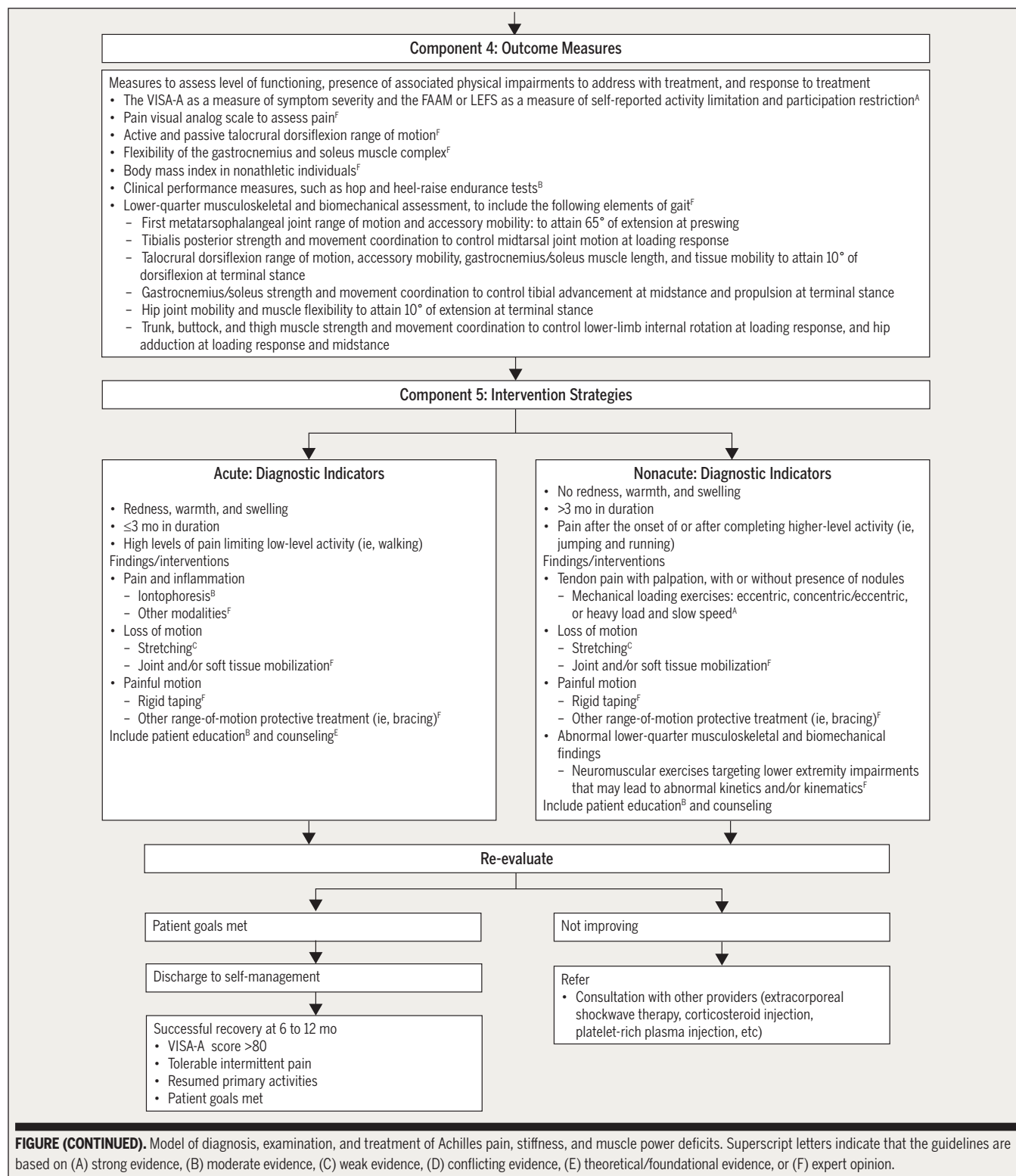
#### Component 2

Evaluation of physical examination findings, as outlined in the **FIGURE**, should be consistent with the diagnosis of midportion Achilles tendinopathy. The diagnosis and management of the patient's condition should be appropriately modified if the evaluation of clinical findings related to the musculoskeletal impairments of body functioning (ICF) and associated tissue pathology/disease (ICD) suggest other foot or ankle conditions in a differential diagnosis list, symptoms from the lumbopelvic region, or systemic or medical disease.

#### Component 3

*Irritability* is a term used by rehabilitation practitioners to reflect the tissue's ability to handle physical stress,<sup>135</sup> and is presumably related to physical status and the extent of injury and inflammatory activity that is present. Diagnosis of tissue irritability as acute or nonacute, according to the signs, symptoms, and duration of the condition, is important in guiding the clinical decisions regarding the intervention strategies as outlined in component 5.

MIDPORTION ACHILLES TENDINOPATHY: CLINICAL PRACTICE GUIDELINES REVISION 2018



**FIGURE (CONTINUED).** Model of diagnosis, examination, and treatment of Achilles pain, stiffness, and muscle power deficits. Superscript letters indicate that the guidelines are based on (A) strong evidence, (B) moderate evidence, (C) weak evidence, (D) conflicting evidence, (E) theoretical/foundational evidence, or (F) expert opinion.

**Component 4**

Outcome measures include an assessment of the patient's functional level and associated physical impairments as outlined in the **FIGURE**. Standardized tools, such as the VISA-A, FAAM, and LEFS, can be used for measuring a specific domain, whether it is a body structure or function, activity limitation, or participation restriction. Outcome measures are important in direct management of individual patient care, and they provide the opportunity to collectively compare care and determine effectiveness through the repeated application of standardized measurement.

**Component 5**

Intervention strategies outline criteria for treatment selection based on diagnostic indicators and clinical examination findings and allow for treatment planning based on re-evaluation. Interventions are grouped based on the following categories: therapeutic exercise (exercise, stretch-

ing, neuromuscular education), manual therapy, education (patient education, patient counseling), home use of medical supplies (bracing), and clinical use of medical devices (iontophoresis). A higher level of evidence indicates greater scientific support for the recommendation, not necessarily the intervention itself. For example, there is a relatively high-level of evidence for the recommendation *not* to use night splints for patients with midportion Achilles tendinopathy. Interventions outside of the scope of physical therapy, including corticosteroid injection, extracorporeal shockwave therapy (ESWT), and platelet-rich plasma (PRP) injections, are included as education for patients who are seeking additional treatment options. Of note, the majority of studies include patients with chronic midportion Achilles tendinopathy. Therefore, treatment of a patient with acute Achilles tendinopathy may depend more on clinical judgment and expert opinion.



Martin RL, Chimenti R, Cuddeford T, et al. Achilles pain, stiffness, and muscle power deficits: midportion Achilles tendinopathy revision 2018: clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther* 2018;48(5):A1-A38. doi:10.2519/jospt.2018.0302